

REMARKS

Claims 1 to 12 are pending. Reconsideration of the application is requested.

Upon review of the file, it was noted that the initialed Form PTO-1449 filed with the Information Disclosure Statement dated April 22, 2009 has not been received. It is requested that the Examiner initial the Form PTO-1449 and return it to the undersigned agent.

§ 102 Rejections

Claim 1 stands rejected under 35 USC § 102(c) as purportedly being anticipated by Oka (US 6551906 B2). It is the Examiner's position that Oka teaches a semiconductor surface protecting method whereby the circuit side of a semiconductor wafer is protected during the step of back side grinding of the wafer comprising joining the circuit side of said semiconductor wafer to a polymeric film material via a fluid surface protecting layer which hardens upon radiation exposure and hardening said surface protecting layer, and grinding said wafer, wherein grinding said wafer is done after hardening said surface protecting layer. The Examiner further points out that UV-curing resin necessitates the use of radiation exposure (UV light) to harden.

The Applicant respectfully traverses for at least the following reason. As noted above, the Examiner's position is that grinding said wafer is done after hardening said surface protecting layer (Oka, col. 3, lines 35-49) (emphasis added). Respectfully, the Applicant's position is that the Examiner has not shown where Oka teaches or suggests that the grinding is done after hardening said surface protecting layer has required by Applicant's claim 1. The Applicant has examined Oka, col. 3, lines 35-49 as well as the remainder of Oka. The Applicant cannot find where in Oka it is taught that grinding said wafer is done after hardening said surface protecting layer. Oka (col. 3, lines 35-49) teach a protective tape 2 for back grinding formed by the tape substrate 21 and the adhesive 22. A tacky resin, a UV-curing resin or a thermoplastic resin may be used for the adhesive 22. In this section, the protective tape 2 is adhered to the front surface of the wafer 1. This cited section does not discuss grinding of the wafer and hardening of the surface protecting layer (which includes the thermoplastic or UV-curing resin adhesive).

Furthermore, Oka teaches that the wafer is cut (subjected to back side grinding – col. 3, lines 47-49), that a tape-shaped adhesive 6 for dice bonding (not the surface protecting layer) is

adhered to the reverse surface of the wafer (col. 3, lines 50-55) and then the protective tape for back grinding is peeled off after being irradiated with UV light (col. 3, lines 60-62) or when the adhesive is a thermoplastic resin, the protective tape is peeled off after being heated such that the adhesiveness is lowered. (col. 3, lines 63-65). One of ordinary skill would know that hardening a tacky adhesive will lower its adhesiveness. Thus, Oka teaches that the hardening of the surface protecting layer is done after grinding. Or, taken as a whole, Oka teaches adhering the surface protecting layer to the wafer, grinding the wafer, and hardening the wafer to lower its adhesiveness. In contrast, Applicant's claim 1 requires joining (adhering) a wafer to a fluid surface protecting layer, hardening the layer and then grinding the wafer. The grinding is done after hardening the surface protecting layer. Thus, the Examiner has not shown that Oka teaches all of the elements of the invention. For at least this reason the Examiner's rejection is improper and should be withdrawn.

The rejection of claim 1 under 35 USC § 102(c) as purportedly being anticipated by Oka (US 6551906 B2) has been overcome and should be withdrawn.

§ 103 Rejections

Claims 2 and 3 stand rejected under 35 USC § 103(a) as purportedly being unpatentable over Oka as applied to claim 1, and further in view of Morita et al. (5516858). With regards to claim 2 and as argued above, the Examiner has not shown that Oka teaches or suggests that the grinding of the wafer is done after hardening said surface protecting layer as required by Applicant's claim 2. Morita does not add this claim limitation. Since the Examiner has not shown that Oka and Morita, alone or in combination, teach all of the limitations of Applicant's claim 2, the Examiner has not made a *prima facie* case of obviousness, therefore the rejection of claim 2 is improper and should be withdrawn.

As to claim 3, the Applicant traverses the rejection for at least the following reason. With regards to claim 3, the Examiner has admitted that Oka does not teach a surface protecting sheet having a polymeric film material which is solid at room temperature. The Examiner asserts that Morita teaches a curable resin, used for protective coatings, with a main component (component (A)) which may be a liquid or a solid at room temperature. Applicant's claim 3 requires a surface protecting layer which is solid at room temperature, becomes fluid upon heating, and

hardens upon exposure to radiation or upon heating to a temperature higher than the fluidization temperature. The Examiner has not shown where Morita teaches or suggests a surface protecting layer that is solid at room temperature, becomes fluid upon heating and hardens upon exposure to radiation or upon heating to a temperature higher than the fluidization temperature. Morita teaches (col. 4, lines 22-30) that the epoxy-functional silicone resin comprising component (B) in the curable resin composition functions through its admixture into component (A) to improve the fluidity of the resulting curable resin composition. Since Morita hasn't been shown to teach or suggest heating component (A) to increase its fluidity, the Examiner has not made a *prima facie* case of obviousness since the Examiner has not shown that the combination of Oka and Morita teach or suggest all of the limitations of Applicant's claim 3. For at least this reason the rejection of claim 3 is improper and should be withdrawn.

The rejection of claim 3 under 35 USC § 103(a) as purportedly being unpatentable over Oka as applied to claim 1, and further in view of Morita et al. (5516858) has been overcome and should be withdrawn.

Claims 4, 5, 6, 9, and 10 stand rejected under 35 U.S.C. 103(a) as purportedly being unpatentable over Oka, in view of Morita, in further view of Hosomi et al. (5726219). The Examiner asserts that Hosomi teaches a resin which contains the components necessary to form phenol-novolac epoxy (meth)acrylate resin and that since phenol-novolac epoxy (meth)acrylate resin is one of the main materials that can be utilized as the in [sic] surface protecting layer, it must have the characteristics laid out in claim 4.

The Applicant traverses these rejections for at least the following reasons. Claims 4, 5, 6, 9, and 10 all ultimately depend upon claim 3 and add further limitations thereto. Since claim 3 is patentable over Oka in view of Morita as described above, likewise so are claims 4, 5, 6, 9, and 10. For at least this reason the rejections are improper and should be withdrawn.

The rejection of claims 4, 5, 6, 9, and 10 under 35 U.S.C. 103(a) as purportedly being unpatentable over Oka, in view of Morita, in further view of Hosomi et al. (5726219) has been overcome and should be withdrawn.

Claims 7 and 8 stand rejected under 35 U.S.C. 103(a) as purportedly being unpatentable over Oka, in view of Morita, in further view of Hosomi, in further view of Komiyama et al. (5118567). Claims 7 and 8 ultimately depend upon claim 3 and add further limitations thereto. Since claim 3 has been shown to be patentable, claims 7, and 8 should also be patentable. For at least this reason, the rejections are improper and should be withdrawn.

The rejection of claims 7 and 8 under 35 U.S.C. 103(a) as purportedly being unpatentable over Oka, in view of Morita, in further view of Hosomi, in further view of Komiyama et al. (5118567) has been overcome and should be withdrawn.

Claims 11 and 12 stand rejected under 35 U.S.C. 103(a) as purportedly being unpatentable over Oka, in view of Morita, in further view of Hosomi, in further view of Komiyama, in further view of Hosomi (5726219). Claims 11 and 12 ultimately depend upon claim 3 and add further limitations thereto. Since claim 3 is patentable as shown above, likewise so are claims 11 and 12.

The rejection of claims 11 and 12 under 35 U.S.C. 103(a) as purportedly being unpatentable over Oka, in view of Morita, in further view of Hosomi, in further view of Komiyama, in further view of Hosomi (5726219) has been overcome and should be withdrawn.

Telephonic Interview

The Applicant wishes to thank Examiner Henry for the telephonic interview of May 26, 2009 during which the Office Action of 3/26/09 was discussed.

The Applicant asked for an explanation of the 102(e) rejection of claim 1 as anticipated by Oka (6551906). The Applicant pointed out that Oka (col. 3, lines 35-67) does not teach all of the limitations of Applicant's claim 1 especially that grinding the wafer is done after hardening said protecting layer. The Examiner explained that since Oka discloses that the tacky resin can be a UV-curing resin (col. 3, line 44) this implicitly requires that the resin was hardened prior to use in the protective tape. However, It is respectfully the Applicant's position that Oka does not teach hardening the resin before grinding the wafer and therefore the Examiner has not made a proper rejection under 102(e).

The Applicant also asked about the 103(a) rejection of claim 3 over Oka in view of Morita (5516858). The Examiner admits that Oka does not teach a surface protecting sheet having a polymeric film material which is solid at room temperature. The Examiner points to Morita for that teaching. Morita teaches a solid component (A) that is admixed with component (B) "to improve the fluidity of the resulting curable resin composition" (col. 4, lines 24-26 of Morita). Applicant's claim 3 requires a surface protecting layer which is solid at room temperature, becomes fluid upon heating and hardens upon exposure to radiation or upon heating to a temperature higher than the fluidizing temperature. Morita does not teach heating the solid surface protecting layer to become fluid. The Examiner has explained that heating is possible when two fluids are mixed and that this is the basis for the rejection. The Applicant argues that two liquids can also cool when mixed and that the heating is not taught by Morita. If the Examiner has information that mixing component (A) and (B) of Morita causes heating then the Applicant respectfully requests that the Examiner disclose to the Applicant the information to support this teaching.

The Applicants respectfully request that the Examiner reevaluate the current rejections and allow the pending claims. The Applicant also invites the Examiner to discuss any remaining issues with the Applicant so that the case can advance to allowance.

In view of the above, it is submitted that the application is in condition for allowance.

Examination and reconsideration of the application is requested. <

Respectfully submitted,

26-May-2009
Date

By: _____/Stephen F. Wolf/
Stephen F. Wolf, Reg. No.: 45,502
Telephone No.: 651-736-9485

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833